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Art Unit 1731
Response to the Final Rejection of June 4, 2003

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) Process for the production of surface-finished paper or board (B_W), ~~characterized in that~~ said process comprising applying to a surface of a hydrophilic paper or board sheet (B) an aqueous solution (L_W) consisting of water and a surface-finishing active ingredient (W) ~~is applied to a hydrophilic paper or board sheet (B)~~,

in which the surface-finishing active ingredient (W) consists of

(W_1) polyethylene glycol with an average molecular weight $\overline{M}_W$ of > 1500

or of said polyethylene glycol (W_1) and at least one further additive ~~which is a further finishing additive and/or a formulation additive~~ selected from the group consisting of a finishing additive (W_2 and/or W_3), a non-finishing additive(W_4), a non-finishing formulation additive(F), and mixtures thereof,

wherein the finishing additive(W_2 and/or W_3) is selected from the group consisting of at least one dye and/or an optical brightener(W_2), a wet strength additive (W_3), and mixtures thereof,

wherein the non-finishing additive(W_4) is an agent for pH adjustment, and

wherein the wet strength additive(W_3) is selected from the group consisting of (W_3') a crosslinkable product of formaldehyde or glyoxal with urea or melamines, (W_3''), a crosslinking catalyst, and mixtures thereof, and

wherein the non-finishing formulation additive(F) is selected from the group consisting of an antifoam(F_{11}), an agent for protecting against the damaging effect of microorganisms(F_{12}) and mixtures thereof ,

and , smoothing and drying said surface treated ~~the~~ paper or board sheet ~~surface treated with (L_W) is fed~~ through smoothing rolls ~~and dried~~.

2.(Currently Amended) Process according to Claim 1, ~~characterized in that~~ wherein (W) consists of at least 30 % by weight of said polyethylene glycol (W_1) ~~and any remainder to 100 % by weight of at least one further of the finishing additives (W_2) and (W_3) and/or formulation additives (W_4), in which~~

~~(W_2) is at least one dye and/or optical brightener,~~

~~(W_3) is at least one wet strength additive~~

~~and (W_4) is at least one agent for pH adjustment.~~

3.(Currently Amended) Process according to Claim 1, characterized in that said aqueous solution (L_w) contains water, said polyethylene glycol and at least one non-finishing formulation additive (F).

4.(Deleted)

5.(Currently Amended) Process according to claim 1, wherein said smoothing comprises ~~at~~ a ~~line pressure of~~ the smoothing pressure ~~rolls~~ in the range of 8 to 500 KN/m.

6.(Currently Amended) Process according to claim 1, ~~characterized in that~~ wherein the smoothing rolls are calendering rolls ~~the paper or board sheet surface-treated with (L_w) is calendered~~.

7. (Deleted)

8. (Deleted)

9.(Currently Amended) Paper or board (B_w) surface-finished in accordance with the process of claim 1, wherein said applying step comprises spraying said aqueous solution and said aqueous solution consisting of water, said polyethylene glycol and the wet strength additive.

10.(Previously Amended) Paper or board (B_w) according to Claim 9 which is essentially size-free and is intaglio printing and offset printing paper or board.

11.(Currently Amended) Process for the production of graphically processed paper or board comprising applying ~~by application of~~ at least one graphic ink pattern to a substrate of paper or board, and drying, ~~characterized in that~~ wherein the substrate ~~used for this purpose~~ is the surface-finished paper ~~(B_W)~~ or ~~surface-finished~~ board (B_W) according to Claim 9.

12.(Currently Amended) The process of ~~Process according to Claims~~ claim 1, ~~characterized in that~~ ~~(L_W) essentially~~ wherein the surface-finishing active ingredient W consists essentially of ~~(W)~~ said (W_1) polyethylene glycol and ~~water and~~ at least one non-finishing formulation additive (F).

13.(Currently Amended) The process of ~~Process according to Claims~~ claim 1, wherein (W) consists of polyethylene glycol(W_1) and at least one further ~~finishing~~ additive selected from the group consisting of a dye(W_2), the optical brightener(W_2), and the wet strength additive(W_3).

14.(Currently Amended) The process of ~~Process according to Claims~~ claim 1, wherein (W) consists of polyethylene glycol (W_1) and ~~a formulation additive~~ the agent for pH adjustment(W_4).

15.(Currently Amended) The process of ~~Process of~~ claim 1, wherein (W) consists of (W_1), ~~and both~~ a at least one further ~~finishing~~ additive selected from the group consisting of the dye(W_2), the optical brightener(W_2), the wet strength additive(W_3), and mixtures thereof and ~~a formulation additive~~ the agent for pH adjustment(W_4).

16.(Deleted)

17.(Currently Amended) A process for the production of surface-finished paper or board (B_W), said process comprising

a) forming a paper web (B) from an aqueous pulp suspension comprising water and transporting the paper web to a press section to remove at least a portion of the water from the paper web to provide a hydrophilic paper or board sheet having a water content of less than or equal to 30 weight percent;

b) applying to a surface of the hydrophilic paper or board sheet (B) an aqueous solution (L_W) which consists of water, a polyethylene glycol (W_1) having an average molecular weight greater than 1500 or said polyethylene glycol and a further additive selected from the group consisting of a water soluble dye, an optical brightener, a wet strength additive, an agent for pH adjustment, a non-finishing formulation additive(F), and mixtures thereof to provide a surface-treated paper or board sheet, wherein the wet strength additive(W_2) is selected from the group consisting of a crosslinkable product of formaldehyde or glyoxal with urea or melamines, a crosslinking catalyst, and mixtures thereof; and,

c) passing the surface-treated paper or board sheet to a smoothing roll zone and therein subjecting the surface treated paper or board sheet to pressure and drying to provide the surface-finished paper or board sheet.

18.(Previously Added) The process of claim 17 wherein the aqueous solution consists of the polyethylene glycol and a the water soluble dye and/or ~~an~~ the optical brightener, wherein the average molecular weight of the polyethylene glycol ~~has an average molecular weight of~~ is between 1600 and 4000.

19.(Currently Amended) The process of claim 17 wherein the aqueous solution consists of the polyethylene glycol and ~~a~~ the wet strength additive and/or ~~an~~ the optical brightener, wherein the average molecular weight of the

polyethylene glycol ~~has an average molecular weight of~~ is between 2000 and 20,000.

20.(Currently Amended) A process for the production of surface-finished paper or board, said process comprising

a) passing a hydrophilic paper or board sheet to a re-wetting zone and therein moistening the hydrophilic paper or board sheet to a moisture content from 4 to 16 % by weight to provide a re-moistened sheet;

b) applying uniformly to a surface of the re-moistened sheet an aqueous solution (L_W) which consists essentially of water, a polyethylene glycol (W_1) having an average molecular weight greater than 1500 or said polyethylene glycol and a further additive selected from the group consisting of a water soluble dye, an optical brightener, a wet strength additive(W_3), an agent for pH adjustment (W_4) , a non-finishing formulation additive (F), and mixtures thereof to provide a surface-treated paper or board sheet wherein the wet strength additive(W_3) is selected from the group consisting of a crosslinkable product of formaldehyde or glyoxal with urea or melamines, a crosslinking catalyst, and mixtures thereof; and,

c) passing the surface-treated paper or board sheet to a smoothing roll zone and therein subjecting the surface treated paper or board sheet to pressure and drying to provide the surface-finished paper or board sheet.

21.(Previously Added) The process of claim 20 wherein the moistening in the re-wetting zone comprises contacting the hydrophilic paper or board sheet with water or with a re-moisturising solution comprising water and from 0.01 to 10 % by weight of a polyethylene glycol having an average molecular weight greater than 1500.

22.(Previously Added) The process of claim 20 wherein the smoothing roll zone comprises calendering.